

FODOR et al.
Serial No. 10/584,862

Atty. Dkt.: 4208-32
Art Unit: 4173

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for handling context of data packet flows, said flows being simultaneous and belonging to the same session, between terminals through a network structure comprising at least a network comprising a number of routers for routing data packet flows between the routers along data packet flow paths connecting said terminals, of which terminals at least one is mobile and may change access between different access points of said network structure, wherein an access point comprises an access router and a middlebox, which is controlled and supported by a Midcom Agent belonging to a domain of said network structure, the method comprising:
 - dividing a total context associated to a session into common context, which is common to all flows of the session, and one dynamic context per data packet flow of the session;
 - storing said common context in the Midcom Agent of a first domain of the network structure;
 - storing each dynamic context in the middlebox through which the associated flow passes;
 - transferring the dynamic context associated to the data packet flow when the data packet flow is moved from ~~the a~~ middlebox in the first domain to another middlebox in ~~an~~the access point in said first domain or to ~~the a~~ middlebox of ~~an~~the access point in a second domain;
 - determining whether all flows belonging to the session are moved from the first domain, or not;
 - transferring the common context of the session flow and the control of the associated dynamic context stored in the middleboxes through which the

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data packets of the session flows from the Midcom Agent of the first domain to the Midcom Agent of the second domain having at least one of said flows, if all said flows have been transferred from said first domain;

- establishing communication between the Midcom Agent of the first domain and the Midcom Agent of the second domain.

2. (CANCELLED)

3. (CANCELLED)

4. (CANCELLED)

5. (Currently Amended) A-The method according to claim 1, further comprising:

- obtaining by means in the middleboxes the address of the Midcom Agent in the first domain from the dynamic context transfer between middleboxes in the first and second domain;
- using said address for registering with and establishing communication with said Midcom Agent of said second domain.

6. (Currently Amended) A-The method according to claim 1, further comprising:

- obtaining by means in the middleboxes the address of the Midcom Agent in the first domain from the dynamic context transfer between middleboxes in the first and second domain;
- sending by means in the Midcom Agent in the second domain a request to the Midcom Agent of the first domain, said request containing the address of the Midcom Agent of the second domain, for registering and establishing communication with the Midcom Agent of said second domain.

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7. (Currently Amended) ~~A~~ The method according to claim 1, further comprising:

- obtaining by means in the middleboxes the domain address of the Midcom Agent of the first domain from a database storing the domain addresses of all the Midcom Agents in the network structure;
- using said address for registering with and establishing communication with said Midcom Agent of said second domain.

8. (Currently Amended) ~~A~~ The method according to claim 1, further comprising:

- obtaining by means in the middleboxes the domain address of the Midcom Agent of the first domain from a database storing the domain addresses of all the Midcom Agents in the network structure;
- sending a request to the Midcom Agent of the first domain, said request containing said address, for registering and establishing communication with the Midcom Agent of said second domain.

9. (Currently Amended) A network system for handling context of data packet flows, the network system comprising:

- plural terminals;
- a number of routers for routing data packet flows between the routers along data packet flow paths connecting said terminals;
- wherein at least one of the terminals is mobile and may change access between different access points of said network structure;
- an access point comprising an access router and a middlebox, which is controlled and supported by a Midcom Agent belonging to a domain of said network structure;
- means for dividing a total context associated to a session into a common context, which is common to all flows of the session, and one dynamic context per data packet flow of the session;

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means for storing said common context in the Midcom Agent of a first domain of the network structure;

means for storing each dynamic context in the middlebox through which the associated flow passes;

means for transferring dynamic context associated to the data packet flow, when the data packet flow is moved from ~~the~~ a middlebox in the first domain to another middlebox in ~~the~~ an access point in said first domain or to ~~the~~ a middlebox of ~~the~~ an access point in a second domain;

means for determining whether all flows belonging to the session are moved from the first domain, or not;

means for transferring the common context of a session flow and the control of the associated dynamic context stored in the middleboxes through which the data packets of the session flows from the Midcom Agent of the first domain to the Midcom Agent of the second domain having at least one of said flows, if all said flows have been transferred from said first domain;

means for establishing communication between the Midcom Agent of the first domain and the Midcom Agent of the second domain.

10. (CANCELLED)

11. (CANCELLED)

12. (CANCELLED)

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13. (Currently Amended) ~~A~~ The network system according to claim 9, further comprising:

- means in the middleboxes for obtaining the address of the Midcom Agent in the first domain from the dynamic context transfer between middleboxes in the first and second domain;
- means for using said address for registering with and establishing communication with said Midcom Agent of said second domain.

14. (Currently Amended) ~~A~~ The network system according to claim 9, further comprising:

- means in the middleboxes for obtaining the address of the Midcom Agent in the first domain from the dynamic context transfer between middleboxes in the first and second domain;
- means in the Midcom Agent in the second domain for sending a request to the Midcom Agent of the first domain, said request containing the address of the Midcom Agent of the second domain, and for registering and establishing communication with the Midcom Agent of said second domain.

15. (Currently Amended) ~~A~~ The network system according to claim 9, further comprising:

- means in the middleboxes for obtaining the domain address of the Midcom Agent of the first domain from a database storing the domain addresses of all the Midcom Agents in the network structure;
- means for using said address for registering with and establishing communication with said Midcom Agent of said second domain.

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16. (Currently Amended) ~~A~~The network system according to claim 9, further comprising:

- means in the middleboxes for obtaining the domain address of the Midcom Agent of the first domain from a database storing the domain addresses of all the Midcom Agents in the network structure;
- means for sending a request to the Midcom Agent of the first domain, said request containing said address, and for registering and establishing communication with the Midcom Agent of said second domain.

17. (Currently Amended) A Midcom Agent for handling context of data packet flows in a network system, wherein the Midcom Agent comprises:

- means for dividing a total context associated to a session into a common context, which is common to all flows of the session, and one dynamic context per data packet flow of the session;
- means for storing said common context in a Midcom Agent of ~~the~~a first domain of a network structure;
- means for storing each dynamic context in a middlebox through which the associated flow passes;
- means for controlling the transfer of dynamic context associated to ~~the~~a data packet flow, when the data packet flow is moved from a middlebox in the first domain to another middlebox in an access point in said first domain or to a middlebox of an access point in a second domain;
- means for determining whether all flows belonging to the session are moved from the first domain, or not;
- means for transferring the common context of the session flow and the control of the associated dynamic context stored in the middleboxes through which the data packets of the session flows from the Midcom Agent of the first domain to the Midcom Agent of the second domain

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having at least one of said flows, if all said flows have been transferred from said first domain;

- means for establishing communication between the Midcom Agent of the first domain and the Midcom Agent of the second domain.

18. (CANCELLED)

19. (CANCELLED)

20. (CANCELLED)

21. (Currently Amended) ~~A~~The Midcom Agent according to claim 17, further comprising:

- means in the middleboxes for obtaining the address of the Midcom Agent in the first domain from the dynamic context transfer between middleboxes in the first and second domain;
- means for using said address for registering with and establishing communication with said Midcom Agent of said second domain.

22. (Currently Amended) ~~A~~The Midcom Agent according to claim 17, further comprising:

- means in the middleboxes for obtaining the address of the Midcom Agent in the first domain from the dynamic context transfer between middleboxes in the first and second domain;
- means in the Midcom Agent in the second domain for sending a request to the Midcom Agent of the first domain, said request containing the address of the Midcom Agent of the second domain, and for registering and establishing communication with the Midcom Agent of said second domain.

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23. (Currently Amended) ~~A~~ The Midcom Agent according to claim 17, further comprising:

means in the middleboxes for obtaining the domain address of the Midcom Agent of the first domain from a database storing the domain addresses of all the Midcom Agents in the network structure;

means for using said address for registering with and establishing communication with said Midcom Agent of said second domain.

24. (Currently Amended) ~~A~~ The Midcom Agent according to claim 17, further comprising:

- means in the middleboxes for obtaining the domain address of the Midcom Agent of the first domain from a database storing the domain addresses of all the Midcom Agents in the network structure;
- means for sending a request to the Midcom Agent of the first domain, said request containing said address, and for registering and establishing communication with the Midcom Agent of said second domain.

25. (CANCELLED)

26. (CANCELLED)

27. (CANCELLED)